

REMARKS

Claims 1-41 are pending in the application. Claims 1-41 stand rejected. Claims 6, 13-15, 21, 28, 32, and 40 were cancelled. Claims 1, 3, 8, 10, 16, 23, 25, 35, and 37 were amended. Claims 1-5, 7-12, 16-20, 22-27, 29-31, 33-39, and 41 remain in the application.

Claims 1-41 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application No. 10/812,605. It is believed that the amendments of the claims overcome this rejection. A terminal disclaimer is, therefore, not filed at this time.

Claims 1, 3, 8, 10, 14, 25, and 37 stand rejected under 35 U.S.C. 112, second paragraph. The rejection indicated:

'Claims 3, 10, 25 and 37 recite the limitation "the binary digital values". There is insufficient antecedent basis for this limitation in the claim as there is no prior mention of "binary digital values" in these claims or their parent claims from which they depend. As such it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

'Claims 14 recites the limitation "the printer print nonuniformities". There is insufficient antecedent basis for this limitation in the claim as there is no prior mention of "printer print nonuniformities" in these claims or their parent claims from which they depend. As such it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

'Claims 1, 8 and 14 recite the limitation "converting the image". There is insufficient antecedent basis for this limitation in these claims as there is no prior mention of an "image" to be converted into a digital bitmap in these claims. The examiner notes the respective method claims disclose only printing an image in the preamble. The examiner notes that printing can only occur after an image has already been converted to a digital bitmap. Therefore it is unclear to the examiner, from the claim language, exactly what subject matter the applicant regards as the invention.

'Due to the above cited indefinite claim language, the examiner applies their broadest reasonable interpretation of the claim language when rejecting these claims in the Claims Rejection section below. Revisions are required.'

The indicated language has been corrected in the remaining claims. The amendments of Claims 3, 10, 25, and 37 are supported at page 16, lines 12-15.

Claims 1, 8, 14, 16-18, and 23 stand rejected under 35 U.S.C 103(a) as being unpatentable over Bares (US 5,057,936) in view of Hirota et al. (US 2003/0142865). Claims 2-7, 9-13, 15, 19-22, and 24-29 stand rejected under 35 U.S.C, 103(a) as being unpatentable over Bares in view of Hirota et al. in further view of Smith et al. (US 5,657,430). Claims 30-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bares in view of Hirota et al. in further view of Fujisaki et al. (US 5,361,330). Claims 36-41 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bares, in view of Hirota et al., in view of Fujisaki et al, in further view of Smith et al.

The rejection of Claim 1 stated:

'With respect to claim 1, Bares discloses a method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability (col. 3, lines 39-43), the method comprising the steps of: converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information (col 3, lines 12-17); The examiner notes that a digital bitmap is inherently comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information.

'Bares does not disclose defining each pixel as either a background pixel, interior pixel; or an edge pixel; and, reassigning the digital value of one or more edge pixels or interior pixels independently, thereby altering the concentration of magnetizable substances within the image when printed in order to improve the readability of printed characters by reading instrumentation.

'Hirota does disclose defining each pixel as either a background pixel, interior pixel, or an edge pixel (page 1 paragraph 0009, page 7, paragraphs 0101-0104); and, reassigning the digital value of one or more edge pixels or interior pixels independently, thereby altering the concentration of toner substances within the image when printed (page 12, paragraph 0160-0161) in order to improve the readability of printed characters (page 1, paragraph 0010).

'The examiner notes that the first allocator defines the boundary between the background and the character image edge (thereby defining edge and background) pixels, page 1, paragraph 0009 and page 7, paragraphs 0102-0103), Further the second allocator defines the area interposed between two boundary portions (thereby defining interior pixels, page 1, paragraph 0009 and page 7, paragraphs 0102-0103). The examiner also notes that in the disclosed character edge emphasis procedure (page 12, paragraph 0161) a gradation of the peripheral edge pixels is selected thereby altering the concentration of toner when printed.

'At the time of the invention it would have been obvious to one skilled in the art to combine Bares magnetic ink character recognition (MICR) toner capable printer, with Hirota's toner printer capable of character edge enhancement, such that the character edge enhancement of Hirota could be applied to a MICR toner capable printer. The suggestion or motivation for doing so would have been to apply the edge correction techniques to a different printer type.'

The rejection of Claim 6 stated:

"With respect to claim 6, Bares in view of Hirota in further view of Smith disclose a method in accordance with claim 1, further comprising performing the defining and reassigning steps two or more times (Hirota: The reassignment of gradation level for an edge pixel in the character edge enhancement occurs for multiple edge pixels. Therefore the examiner views the reassigning step to be performed multiple times, page 12, paragraph 0161)."

Claim 1 has been amended to state:

1. A printing method comprising the steps of:
 - converting a digital image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;
 - defining each pixel as either a background pixel, interior pixel, or an edge pixel;
 - reassigning the digital value of some edge pixels or interior pixels independently;
 - performing the defining and reassigning steps two or more times to provide a reassigned bitmap; and

electrophotographically printing the reassigned bitmap with MICR toner to provide a MICR toner image;

wherein each said reassigning provides interior edges and exterior edges having different values and said reassigning increases machine readability of said MICR toner image.

Claim 1 is supported by the application as filed, notably the original claims (see claims 1 and 6) and at page 30, lines 3-15 (also see Figures 5a-8d and 10 and related text); page 28, lines 17-19; page 21, lines 10-21.

Claim 1 requires defining pixels and reassigning some edge pixels or interior pixels independently two or more times, in which each reassigning defines interior edges and exterior edges having different values. The reassigning increases machine readability of a printed MICR toner image. This is unlike original claim 6 and Hirota in view of Smith. In amended Claim 1, each reassigning reassigns multiple pixels to provide two different kinds of edges. Since the defining and reassigning are repeated, there are multiple times of reassigning multiple pixels, each providing interior edges and exterior edges having different values. Claim 1 also requires that the reassigning increases machine readability of the MICR toner image. The cited references do not even recognize that the reassigning steps could be subject to this limitation.

Claims 8, 16, 23, and 35 are supported and allowable on the same grounds as Claim 1.

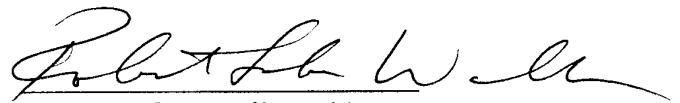
Claims 2-5, 7, 9-12, 17-20, 22, 24-27, 29-31, 33-34, 36-39, and 41 are allowable as depending from respective allowable independent claims.

Claims 6, 13-15, 21, 28, 32, and 40 were cancelled.

It is believed that these changes now make the claims clear and definite and, if there are any problems with these changes, Applicants' attorney would appreciate a telephone call.

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Robert Luke Walker", written in a cursive style.

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